TEACHERS' RETIREMENT BOARD

INVESTMENT COMMITTEE

SUBJECT: Equity- Emerging Market Equity ITEM NUMBER: 5

ATTACHMENT(S): 2

ACTION: X DATE OF MEETING: November 4, 1998

INFORMATION: ___ PRESENTER(S): Mr. Emkin

EXECUTIVE SUMMARY

As part of the 1997 asset allocation review, the California State Teachers Retirement System (STRS) adopted a 25% allocation to non-U.S. equity (20% developed markets and 5% emerging markets). In July 1998, Pension Consulting Alliance (PCA) and staff were directed to complete an analysis of the appropriate performance benchmark for the non-U.S. equity portfolio.

PCA and staff have reviewed a variety of aspects relating to non-U.S. equity including the appropriate allocation to emerging market equity. In light of recent events in the global marketplace, this analysis was timely. Attachment 1 contains a review of the evolution of the non-U.S. equity market, non-U.S. benchmark development, and strategic implications when selecting a non-U.S. equity benchmark. One consideration when selecting a strategic benchmark is the weighting type, either fixed weight (nominal and static) or market weight (relative and dynamic).

RECOMMENDATION

After review of the academic research, general consultant's analysis, and peer group information, staff recommends that the Investment Committee:

1. Adopt the MSCI All Country free ex-U.S. Index (ACxUS) as the strategic benchmark for non-U.S. equity. The ACxUS contains a market weight of developed market (European and Pacific Basin) and emerging market (global) components.
2. Reaffirm a strategic asset allocation target of 25% non-U.S. equity in ACxUS weights with a range of 22% to 28%.
3. Reaffirm a 50% active management and 50% passive management strategy for all non-U.S. equity with European, Pacific Basin, and Emerging Market components.

A Review of the Non-U.S. Equity Benchmark

Executive Summary

As stated in the California State Teachers' Retirement System's (STRS) Investment Branch 1997/98 Goals and Objectives, review of asset class performance benchmarks across each asset class should take place in conjunction with meeting the Investment Branch's other goals. Over the last several months, STRS' Board, staff, and general consultant have discussed various aspects of international equity investing. This report helps bring closure to these issues by reviewing a non-U.S. equity asset class benchmark that will help to clarify STRS' international equity investment policy.

Findings

- STRS has made a significant commitment to non-U.S. equity. As of June 30, 1998, STRS had $18.5 billion invested in non-U.S. equity mandates. This amounted to 21% of total fund assets, in contrast to a policy target of 25% of total assets.

- As part of its non-U.S. equity investment policy, STRS continues to have a significant commitment to emerging markets. Based on investment policy approved in mid-1997, emerging markets were allowed to account for as much as 20% of non-U.S. equity assets. (This was the proportion of emerging markets as a percent of all non-U.S. equity at the time the Board adopted the policy. Since that time emerging markets have lost significant value causing this proportion to fall to approximately 9%.)

- STRS currently uses the MSCI EAFE Index as its proxy for the non-U.S. equity asset class at the policy level. The EAFE Index represents predominantly developed markets, in spite of the fact that STRS policy allows for significant emerging markets exposure within its non-U.S. equity portfolio.

- While the Pacific Basin region and emerging markets have exhibited significant volatility over the last 12 – 18 months, consensus opinion recognizes that these regions of the global economy will continue to be critical areas of investment consideration. As a result, non-U.S. equity performance benchmarks have developed to allow inclusion of emerging markets at a more strategic level.

- Over the years, several institutions have adopted some form of "fixed-weight" benchmarks for policy purposes within the non-U.S. equity asset class. These fixed-weight benchmarks were designed to limit exposure to specific risk factors (such as the Japanese economy) that many believed eventually dominated non-U.S. equity investment performance. Many institutions using these benchmarks, as reflected in their investment policies, actually experienced

significantly dampened investment performance, producing results that were the exact opposite of original intentions. These experiences indicate that capitalization-weighted benchmarks may prove to be a more rationale choice for prudent investors.

Recommendation

Pension Consulting Alliance (PCA) concurs with staff's recommendation that STRS adopt the MSCI All Country ex-U.S. Free Index (ACxUS) as its asset class benchmark for its non-U.S. equity portfolio. The primary rationale for selecting the ACxUS is that it contains strategic exposure to the emerging markets, which is consistent with STRS' current non-U.S. investment policy. Using the ACxUS benchmark will further align actual portfolio activities with the intentions of STRS' investment policy. Adopting the ACxUS should have very little impact on STRS non-U.S. investment activities.

Evolution of Non-U.S. Equity Markets

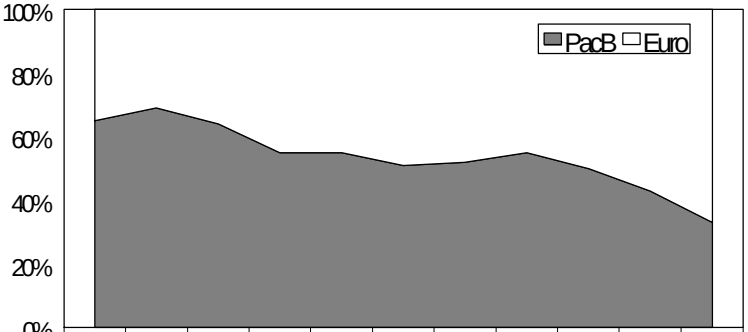
Over the last 15 – 20 years, non-U.S. equity investing has changed dramatically. U.S. investors began making serious commitments to international equity in the early 1980's. By 1992, U.S. pension funds had invested approximately $118 billion in non-U.S. equity. By the end of 1997, this total had grown to $463 billion. Projections indicate that U.S. pension funds will have over $800 billion invested outside of the U.S. by 2002.

In addition to this dramatic funding trend, the acceptance of international equity as an asset class has also grown significantly. In 1992, the average allocation to international was just under 4% of total pension assets. By 1997, the average allocation had grown to 8% of total assets. By 2002, projections indicate that the average pension fund will have 11% of its portfolio invested in international equity.[1]

Coupled with the high level of U.S. acceptance of non-U.S. equity investing, the non-U.S. equity markets, themselves, have changed dramatically over this period. The two fundamental shifts occurring within the non-U.S. equity markets during the last 15 years have been i) the major relative valuation shift between Europe and Japan in the developed markets and ii) the strong growth of the world's emerging markets.

When investors began investing internationally in the 1980's, one rationale for an international equity commitment was the potential for incrementally higher returns. Much of this potential emanated from Japan, which had continued its stellar Post-War growth track record for more than three decades. Beginning in the late 1980's, Japan's economic prowess peaked and began to weaken over the next several years. Equity valuations quickly began reflecting the souring outlook for the Japan economy (see charts).

Allocations Between Major Regions of Non-U.S. Developed Markets

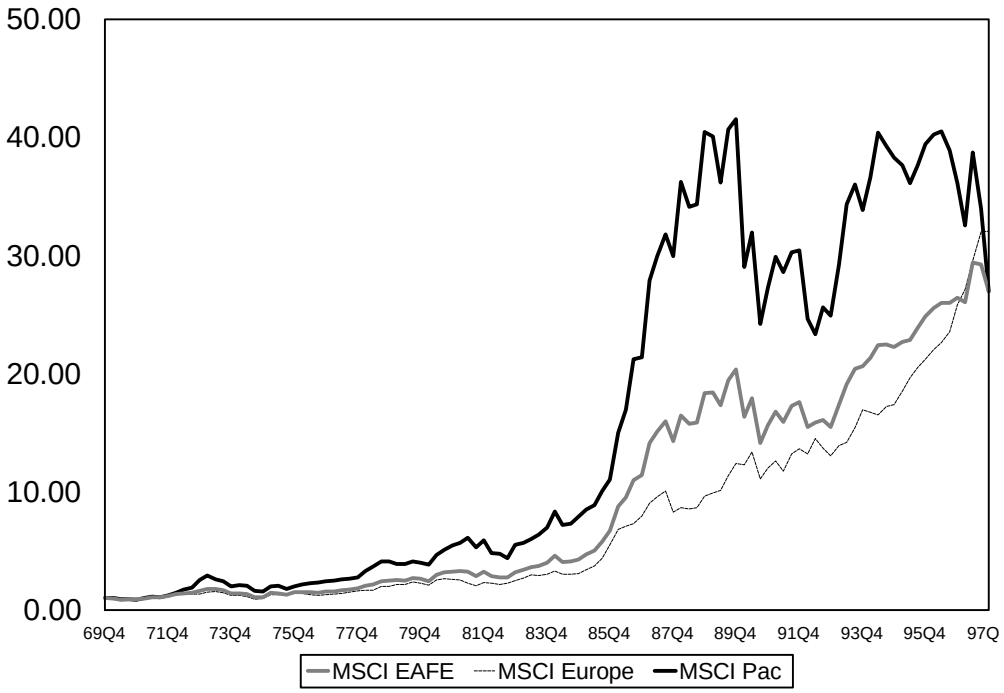


	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Euro	35	31	36	45	45	49	48	45	50	57	67
PacB	65	69	64	55	55	51	52	55	50	43	33

(Pacific Basin Region Consists Largely of Japan)

[1] Source for data in first two paragraphs is InterSec, "1997…and Forward, World Pension Assets and U.S. Tax Exempt Cross-Border Investments."

Performance of Developed Market Regions



(Growth of $1)

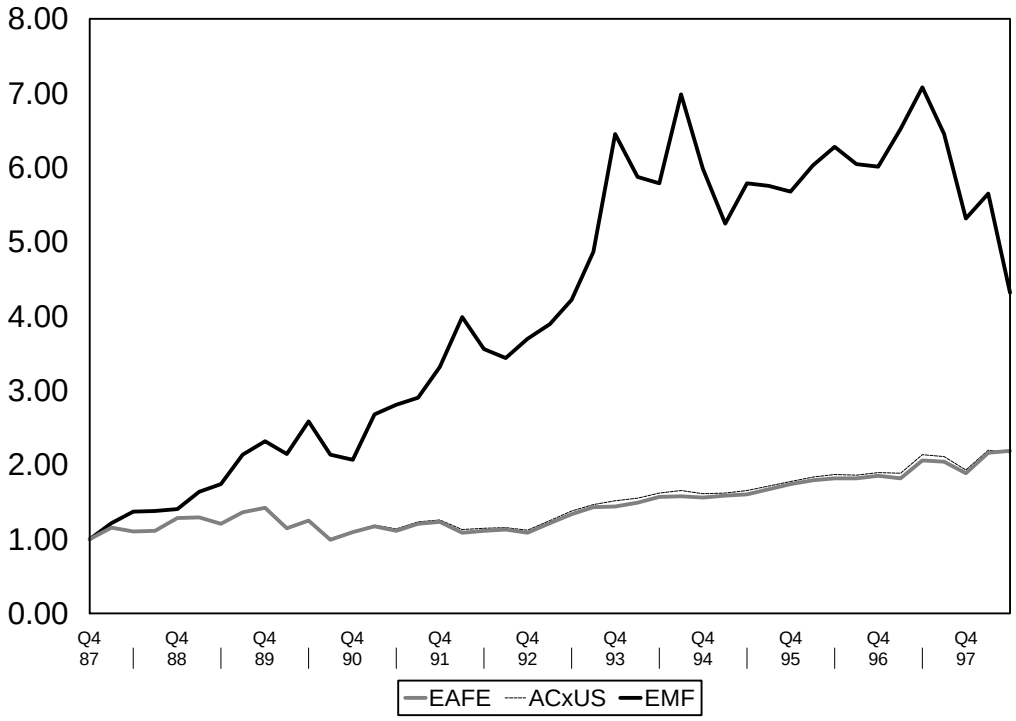
Source: Morgan Stanley Capital International

Commensurate with Japan's mid-1980's surge and then 1990's floundering, Europe has behaved in the opposite fashion as it has recovered from its 1980's economic recessionary environment and grown into a region that may compete with the United States in coming years.

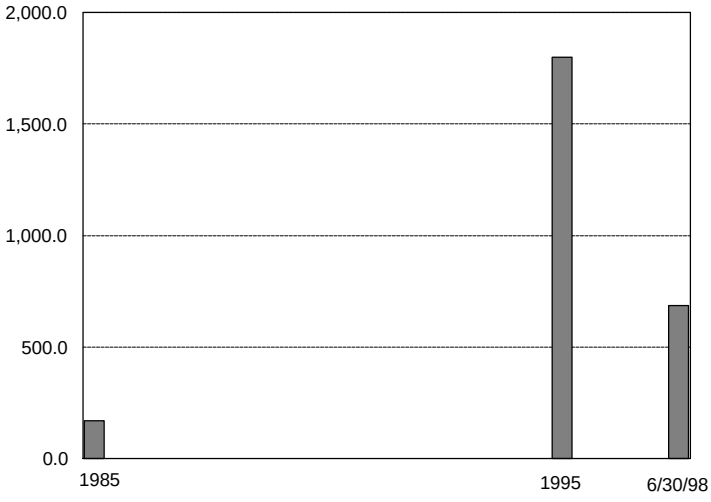
Coinciding with the regional dynamics of the developed markets has been the rapid growth of the emerging markets. In 1985, these markets (consisting primarily of the developing Pacific Basin, Latin America, and Eastern Europe economies) had a total capitalization of $168 billion, amounting to just under 8% of non-U.S. equity capitalization. In the early-1990's, as a result of compelling returns, promising economic fundamentals, and increased institutional interest, the emerging markets had grown nearly ten-fold, to approximately $1.8 trillion. As a result, emerging markets accounted for 16% of all non-U.S. equity assets. However, largely because of the economic turmoil in Japan and the political fallout in several neighboring emerging Pacific Basin economies, the emerging markets now constitute just under 9% of all non-U.S. equity assets (see charts, next page).

Performance of Major Non-U.S. Equity Indices

(Growth of $1)



Dollar Value of Emerging Markets ($ Billions)



Emerging Markets as Proportion of Non-U.S. Equity (in %)

Sources: Morgan Stanley Capital International, AIMR, IFC, Brinson

In spite of the recent significant declines in value within the emerging markets, they still constitute nearly three-quarters of a trillion dollars of investable assets and the economic fundamental underpinnings many of these markets are still intact. As a result, any investor contemplating non-U.S. international equity investing should still view emerging markets as a legitimate asset class or sector of the broader non-U.S. equity universe.

Benchmark Development Mirrors Market Dynamics

Performance benchmarks have also evolved significantly, reflecting the trends in the non-U.S. equity markets. In the mid-1980's, most institutional investors measured non-U.S. equity portfolio performance using Morgan Stanley Capital International's (MSCI) Europe Australia Far East (EAFE) Index. Usage of the EAFE Index remains intact, much like the S&P 500 benchmark used for domestic equity portfolios – despite some important flaws, it is still broadly accepted by the institutional community.

During the late 1980's many institutional investors (and their consultants) became concerned that Japan was becoming too large a component of the EAFE Index. (In 1989, due to strong performance of Japanese stocks, Japan accounted for more than 60% of the EAFE Index's value). At this point, several institutional investors adopted modified EAFE Indices that constrained Japan's index weighting, or even eliminated it entirely. Examples of such indices included the 50/50 EAFE Index, which weighted the Pacific Basin and Europe regions within EAFE evenly, and EAFE ex-Japan Index, which eliminated Japan completely.

During the early 1990's, as more capital began flowing into the emerging markets, several dedicated emerging market indices were developed. Their construction posed some major hurdles because many of the political regimes within the emerging markets did not allow free market economies, leading to restricted ownership of securities by non-local investors. Due to this major factor, many of the emerging market benchmarks were viewed as "stand alone" benchmarks, not to be mingled with their developed market counterparts.

Over time, however, institutional commitment to the emerging markets grew substantially. In 1992 U.S. investors had committed less than $10 billion to emerging market equities. By 1997, this amount had grown more than six-fold to just less than $65 billion.[2] In addition, the global economy has come to rely more on the emerging markets as a major source of resources and products. Reflecting these trends, there are now a variety of approaches for integrating emerging markets' performance into non-U.S. equity performance. Many investors continue to treat emerging markets as a separate and unique asset class, while others view emerging markets as an integrated sector of a broader-than-EAFE equity benchmark.

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[2] *Ibid*., InterSec

Strategic Implications for Determining a Non-U.S. Equity Benchmark

As highlighted above, institutional acceptance of non-U.S. equity investment strategies that extend beyond the EAFE Index universe of securities is now common. As a result, many institutional investors are reviewing the appropriateness of their performance benchmarks for the non-U.S. equity asset class.

Such study is analogous to the review and broadening of performance benchmarks for the domestic equity asset class. In the 1970's and 1980's, the S&P 500 was the index of choice for measuring domestic equity asset class performance. In the mid- and late-1980's, small capitalization investment strategies (which invested in securities outside the S&P 500) became more prolific, initially treating smaller stocks as a separate asset class. Over time, however, as small capitalization investment management became more institutionalized, investors began treating it as a major segment of the broader domestic equity asset class. Reflecting this treatment, institutional investors (including STRS) have begun adopting broader domestic equity asset class benchmarks (such as the Russell 3000 or Wilshire 5000) that include equity securities of both larger companies (represented by the S&P 500) and smaller companies. Institutional investors now use these broader benchmarks because i) they better reflect the strategic commitments to all segments of the broader asset class and ii) these benchmarks are better tools for assessing the aggregate performance of the combined strategies utilized within the domestic equity asset class.

As institutionalization of a specific asset class (such as non-U.S. equity) evolves, there is potential for a lack of alignment between the acceptance of extended strategies within an asset class and the benchmark used to measure the asset class' performance. In instances where the policy benchmarks are not adjusted to account for extensions in investment strategy, it becomes difficult to assign responsibility for asset class performance to the appropriate decision-makers.

To rectify this issue, policy makers have two choices: i) adopt a broader asset class benchmark that accounts for the extended strategic commitment, or ii) treat the extended investment strategy as a separate asset class. Either approach is reasonable, but both contain certain tradeoffs. Typically, under the latter approach, significant commitments are made to extended strategies because, in an asset class setting, each asset class must play a material role in the overall portfolio. In addition, this approach forces a significant amount of accountability for investment performance to the policy level. If the asset class in question exhibits volatile performance (which is the case with both smaller company stocks and emerging markets), it will, in turn, have a dramatic impact on the performance of the aggregate policy portfolio. At times, such volatility can be hard to deal with. Finally, policy may direct significant additional funding into the volatile asset class. Such continued funding may prove challenging to execute in light poor performance, leaving policy implementation incomplete.

Under approach (i), the extended strategies are accounted for within a broader existing asset class benchmark (typically as a unique segment of the broad benchmark), rather than as a new asset class. One possible factor in deciding upon this approach is whether the strategy under consideration possesses risk characteristics that are also shared by the broader asset class. For example, the investment returns of domestic small company stocks are actually highly correlated to their large cap counterparts,[3] indicating that they share similar exposures to certain risk factors. While returns of emerging markets benchmarks are not as highly correlated to EAFE as domestic small stocks are to the S&P 500, their equity orientation and exposure to currency risk are two key factors that they share with the developed country benchmarks.

An additional important challenge in adopting an asset class benchmark that includes a new strategic segment is determining the weight or proportion that the new strategic segment will have within the broader benchmark. Two general options exist: i) establish a fixed weight for the major components of the broad benchmark (including the new strategic segment), or ii) use a capitalization-weighting approach (each segment's proportion is determined by its market capitalization value and its performance relative to the other segments).

The first option is very similar to treating the extended strategy as a separate asset class. In this case, if the segment benchmark underperformed the other benchmark components, additional funding of the segment strategy may be required (as required if the strategy was treated as a separate asset class). Not only could the funding of a volatile segment be counterintuitive, but the costs of funding pre-established targets for volatile asset segments/classes can prove material.[4]

The impact on overall performance of holding a fixed-weight segment within an asset class may also be the same as if the segment was considered a separate asset class held at the same weight. However, responsibility for that performance will lie not at the policy level, but to activities within the asset class.

Under the second option (a capitalization-weighting approach), a broad benchmark is selected that includes securities that reflect the segment investment strategy under consideration. Segment weightings are then determined by their capitalization proportions within the broad benchmark. The segment weightings within the benchmark rise and fall over time as a function of the segments' relative performance. As a result, constructing

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3 Correlations between small stock benchmarks and their large stock or broad market counterparts range from approximately 0.60 to 0.80, depending on the benchmark and time period selected. For example, see "Benchmark Study IX, Midyear 1998," Prudential Securities, Inc.

4 For example, maintaining a 50/50 Europe/PacBasin index portfolio would require annual purchases and sales of the regional portfolios amounting to 10% of the portfolio's value (over and above rebalancing activities associated with dividends and corporate actions), versus nearly no turnover associated with an EAFE Index portfolio. The costs associated with this activity are likely to reduce any purported risk-adjusted added value associated with the 50/50 fixed-weight benchmark. Other fixed-weight benchmarks, such as an 80% EAFE / 20% Emerging benchmark are likely to encounter similar frictional costs.

asset class portfolios using a capitalization-weighted benchmark should eliminate much of the need and cost of rebalancing to pre-established fixed segment weights. These observations highlight that, of all the benchmark options available, capitalization-weighted benchmarks (and the portfolio policies reflecting such benchmarks) are the easiest and least costly to maintain.

A Review of STRS' Non-U.S. Equity Benchmark Policy

Since 1992, STRS has made material investment in non-U.S. equities. As of June 30, 1998, STRS' aggregate non-U.S. equity portfolio totaled slightly more than $18.5 billion, accounting for approximately 21% of total portfolio assets.

In late 1995, STRS adopted policies allowing for investment in emerging markets. In early 1996, STRS began funding a tiered country-weighting passive emerging markets portfolio which, as of June 30, 1998, totals $968 million.

Over the last several years, STRS' policy has increased its allocation to non-U.S. equity. In 1993, STRS raised its allocation to 18%, from its prior target of 15%. The 18% policy target remained intact until STRS' latest policy review, which occurred in mid-1997. At this point, STRS raised its policy allocation from 18% to 25%.

An important factor impacting the non-U.S. equity allocation was the allowance to include emerging markets within the foreign equity component. The recent changes in asset allocation policy allowed emerging markets to account for up to 20% of non-U.S. equity assets. (This level was the capital-weighted proportion of the emerging market segment at the time the policy decision was made.)

Following the approval of STRS' latest asset allocation policy, the STRS' Board approved the STRS' Investment Branch's 1997/98 Goals and Objectives. A key component of these goals and objectives was to review performance benchmarks on asset class-by-asset class basis. During the third quarter of 1997, STRS approved use of a broader domestic equity benchmark, the Russell 3000 Index. Prior to that time, STRS had measured active domestic equity performance against the S&P 500.

This review of the non-U.S. asset class benchmark is a continuation of implementation of 1997/98 Goals and Objectives. Currently, STRS utilizes the EAFE Index as the performance benchmark for the non-U.S. equity asset class.[5] In May, 1998, PCA recommended continued use of the EAFE Index, until review of the 1997/98 Goals and Objectives pertaining to the non-U.S. equity portfolio could take place.

[5] For performance attribution purposes, PCA utilizes i) an 80%/20% EAFE/Emerging index for the passive component of the non-U.S. portfolio, reflecting recently-adopted policy and ii) the EAFE Index for the active component of the non U.S. portfolio.

Non-U.S. Equity Asset Class Benchmark

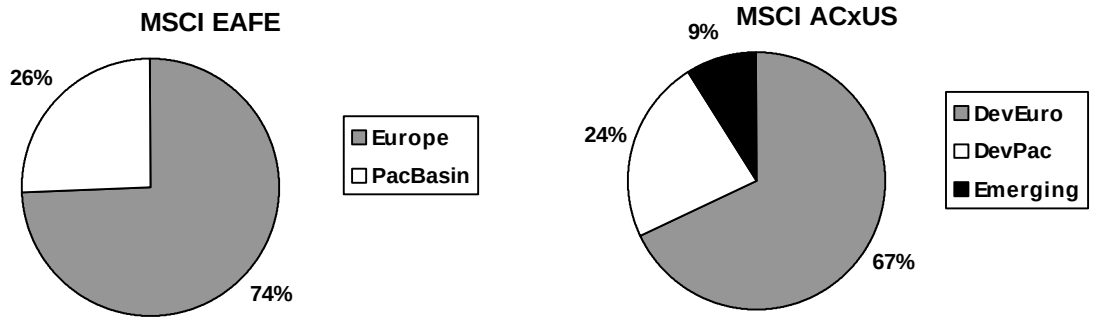
PCA concurs with staff's recommendation that STRS adopt the MSCI All Country ex-U.S. Free Index (ACxUS) as its asset class benchmark for the non-U.S. equity asset class. The fundamental basis for this transition is that STRS policy makes a strategic commitment to emerging markets. The ACxUS includes both developed and emerging markets components. Also, using the ACxUS applies a capitalization-weighted approach to the developed and emerging markets components, rather than a fixed-weighting scheme currently implied by STRS policy. Because the emerging markets are one of the most volatile asset groups,[6] a benchmark comprised of segments based on fixed weightings (such as 80% EAFE plus 20% MSCI Emerging Markets) could produce significantly different performance results than a capitalization-weighted benchmark.[7]

Characteristics of the ACxUS

The ACxUS uses the EAFE index as its major component and then adds Canada and countries contained in the MSCI EMF Index:

ACxUS = EAFE + Canada + MSCI EMF

In total, the ACxUS contains 46 countries, up from EAFE's 20 countries.[8] As of 6/30/98, the ACxUS totaled over $8.1 trillion in market capitalization, in contrast to EAFE's total capitalization of $7.1 trillion. In the ACxUS, the allocation to emerging markets causes the overall allocation to the developed regions to decline modestly (see charts below).



6 Emerging markets (as measured by the MSCI EMF Index) were twice as volatile as EAFE and the Russell 3000 for the five year period ending 6/30/98. Longer ten-year figures show equivalent results.

7 As stated earlier, emerging markets peaked at almost 20% of all non-U.S. equity assets in 1995, only to fall to less than 9% by 6/30/98. This volatility in proportional weightings can cause significant differences in performance between fixed-weight and cap.-weighted indices.

8 Malaysia, once in EAFE, was transferred to the MSCI EMF Index in mid-1998.

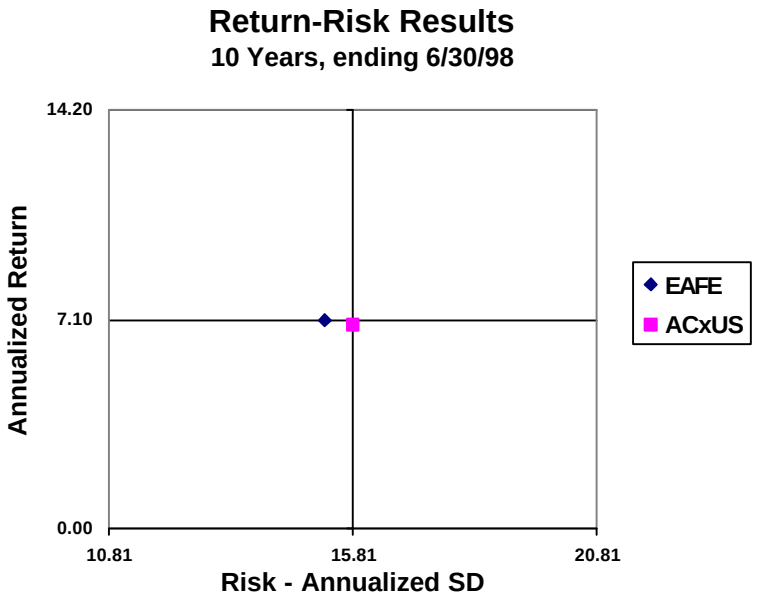
Looking at investment performance, EAFE and the ACxUS indices have performed roughly in tandem with one another over the last 10 years.

Non-U.S. Equity Benchmark Performance Statistics
(Returns in %)

	Annualized Returns, Ending 6/30/98				Calendar Year Return				
Index	1 Yr	3 Yrs	5 Yrs	10 Yrs	1997	1996	1995	1994	1993
MSCI EAFE	6.4	11.0	10.3	7.1	2.1	6.4	11.6	8.1	32.9
MSCI ACxUS	1.4	9.4	9.5	6.9	2.0	6.7	9.9	6.6	34.9
MSCI EMF	-39.1	-9.3	0.5	12.2	-11.6	6.0	-5.2	-7.3	74.8
ACxUS Beta v. EAFE		0.98	0.96	0.96					
ACxUS Alpha v. EAFE		-0.33	-0.11	.03					
ACxUS Rsqd v. EAFE		0.98	.94	0.99					

Over the last 10 years, the R-squared statistic between the EAFE and ACxUS indices has been a near-perfect 0.99, indicating that they have moved in tandem with one another over this period. The beta statistic between these two indices is also near 1.0, indicating that their exposure to major non-U.S. equity risk factors is also similar. The significant negative alphas of the ACxUS versus EAFE over the last three and five year periods reflect the detrimental impact of the emerging markets on the ACxUS index. As the MSCI EMF figures highlight, the last five years have been challenging for emerging markets. In spite of this poor performance, emerging markets have still produced returns that nearly doubled those of EAFE over the last ten years. This finding reflects the long-term potential for investing in emerging markets.

On a risk-adjusted basis, the EAFE and ACxUS benchmarks have produced very similar results (see chart).



The above data indicates that over longer horizons, the ACxUS has behaved similarly to the EAFE Index. Because of its exposure to emerging markets, shorter term fluctuations may deviate significantly from the behavior of the EAFE benchmark. Therefore, when an institutional investor, such as STRS, makes a strategic commitment to emerging markets, the ACxUS may represent the overall non-U.S. equity asset class better than EAFE in short-term and provide roughly equivalent tracking to the non-U.S. equity asset class in the longer-term.

Attachment 2
Investment Committee - Item 5
November 4, 1998

PROPOSED
RESOLUTION OF THE
TEACHERS' RETIREMENT BOARD
INVESTMENT COMMITTEE

SUBJECT: Emerging Market Equity

Resolution No._____

WHEREAS, the Board is responsible for managing the Teachers' Retirement Fund (Fund), a Pension Fund; and

WHEREAS, the Investment Committee of the Teachers' Retirement Board is responsible for recommending to the Board, investment policy and overall investment strategy; and

WHEREAS, the Investment Committee has reviewed academic research, the written and oral presentations from Pension Consulting Alliance and Staff;
Therefore be it

RESOLVED, that the Investment Committee of the Teachers' Retirement Board adopts the following:

1. Adopt the MSCI All Country free ex-U.S. Index (ACxUS) as the strategic benchmark for non-U.S. equity. The ACxUS contains a market weight of developed market (European and Pacific Basin) and emerging market (global) components.
2. Reaffirm a strategic asset allocation target of 25% non-U.S. equity in ACxUS weights with a range of 22% to 28%.
3. Reaffirm a 50% active management and 50% passive management strategy for all non-U.S. equity with European, Pacific Basin, and Emerging Market components.

Adopted by:
Investment Committee
on _____

_____
James D. Mosman
Chief Executive Officer